A NOTE ON THE ANATOMY OF THE HYMEN AND ON THAT OF THE "POSTERIOR COMMISSURE OF THE VULVA."

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1. *Note on the Anatomy of the Hymen.*

THE hymen is stated in the text-books to present, in the adult virgin, several varieties of form, of which the crescentic is the most common, other not unusual varieties being the annular and the cribriform. The aperture is usually described and figured as being either circular or oblong, and its edges are said to lie apart.

The object of this paper is to point out that these descriptions convey an erroneous impression, being based on the appearance presented by the parts when held asunder, and not as they are when allowed to retain their natural position and relations.

For many years it has been my custom to make vaginal examinations with the patient lying in the dorsal position, with the knees flexed and widely separated, and before a good light. In this position a full view of the vulva is obtained, and I have thus been enabled to observe, and to demonstrate to my class, the natural position and relations of the external genital organs as they are seen in the living subject, and before the parts have been in any way disturbed. The position and relations of the structures so displayed vary, of course, according to whether the patient under examination is or is not a virgin, and in the latter case according to whether she has or has not borne children. I propose to limit myself here to the conditions met with in the adult virgin. Normally, the hymen in the adult virgin is completely concealed from view by the labia minora, which close over it, with their internal surfaces in apposition, and their edges (supposing the subject to be in the dorsal position) directed forwards. On separating the labia

minora in such a manner as not to disturb the structures lying in the plane behind them, another pair of closed lips is exposed to view. These lips are formed by the free border of the hymen, and close the orifice of the vagina. No actual opening is seen either into the vagina or the urethra. The orifices of both the urethra and the vagina are vertical slits, bordered by lips, the inner surfaces of which are in close apposition, and the edges of which are, like those of the labia minora, directed forwards. The lips of the hymen are pale, moist, and thin, their free borders being sometimes straight and even, but often irregularly denticulate or notched. Their upper extremities meet in a little fold, the apex of which is prolonged, so as to reach and partially conceal the lower extremity of the orifice of the urethra, and constitute the so-called fleshy caruncle, often recommended as a landmark for discovering the meatus urinarius when passing a catheter.

If an elliptical or slit-like opening, like that of the hymen, be dilated by a more or less cylindrical body, the obvious result will be to separate its sides and to widen, or even obliterate, the angle at each end. In the case of the hymen, such dilatation may take place either from without (by sexual intercourse, digital examination, or the introduction of pessaries or specula) or from within (by the passage of the child during parturition, or by the extrusion of a congenitally elongated cervix, or a partially prolapsed uterus). Except in the healthy virgin, therefore, the apex of the folded hymen is seldom recognisable as a distinct prominence, and this is the reason why, when wanted as a landmark, it so often cannot be found. It has disappeared in consequence of the alterations that repeated dilatation has produced in the hymen. Hence, I entirely agree with Dr Coe ("Amer. Syst. of Gynecology and Obstetrics," *Gynecology*, vol. i., Edin., 1887, p. 115) in his opinion that "in passing a catheter by the sense of touch the physician will do well to disregard the rule laid down in most of the text-books on obstetrics, and, instead of searching the vestibular area for a guide to the meatus, to look for it at once in the median line immediately above the vaginal outlet."

A much better rule than the one commonly given is to introduce the forefinger into the vagina, with its palmar surface

against the anterior wall, in the substance of which the urethra is embedded, and can easily be felt. This method has other advantages besides that of being universally applicable. It ensures that the catheter does not enter the vaginal orifice by mistake for the urethra, and it enables the instrument to be felt and directed by the finger as it passes along the urethral canal.

The inferior extremities of the lips of the hymen are continued into a somewhat longer fold, consisting of the lower part of the hymen (which is considerably broader, from its free to its attached border, than the upper part) folded together, with the edge of the fold forwards. The whole hymen, then, may be described as a long fold of mucous membrane with its edge directed forwards, and divided, along about three-fourths of its length, by a slit, which extends nearer to its upper than its lower extremity. The slit constitutes the orifice of the vagina.

If the lips of the hymen be separated, the appearances usually described will be seen, viz., a fold of mucous membrane surrounding the vaginal orifice, broader below than above, and with its free edge more or less everted. It is often stated that the hymen is occasionally absent. I have had occasion during the last twenty years to examine a very considerable number of women, and I have never yet seen a woman in whom the hymen could not be found, or even one in whom it was not easily demonstrable. In fact, it is quite exceptional to meet with a case presenting any marked departure from the type I have just attempted to describe. Occasionally, there are lateral notches of such a depth that the lips of the hymen close in a more or less cruciform manner, and now and then I have seen the lips meet altogether transversely instead of vertically. A cribriform hymen is a curiosity I have yet to see, and, until I do see it, or discover some one who has seen it, and upon whose accuracy of observation I can rely, I shall feel myself justified in regarding its existence as problematical.

Of the changes that are produced in the hymen by abnormalities—such as persistence of the vaginal septum, and congenital elongation of the cervix; by pathological conditions, such as prolapse of the pelvic floor (which occasionally occurs even in the virgin); by sexual intercourse and by parturition—

it is no part of my present purpose to speak. I should like, however, to call attention to a paper published in the *Path. Trans.* for 1890 by my colleague, Mr Shattock, the Curator of the St Thomas's Hospital Museum. "If," says Mr Shattock, "the termination of the vagina is examined in a fœtus of the earlier months by separating the labia," it is seen to project "forwards into the cleft between the labia as two apposed longitudinal lips." He proceeds to show from actual preparations that the male also possesses a hymen. Leuckart pointed out in 1852 that the vesicula prostatica represents not only the uterus but the vagina of the female, and it occurred to Mr Shattock that, this being the case, an analogue of the hymen would be found in the adult male at the spot where the prostatic vesicle opens into the urethra. He accordingly made dissections, and found that the termination of the male vesicula, as viewed on opening the prostatic urethra through its anterior wall, consists of two projecting apposed longitudinal lips, forming a miniature hymen. It is, in fact, this male hymen that constitutes the eminence of the verumontanum. I merely mention this homology as an extremely interesting scientific fact. The point to which I wish particularly to call attention is that the form of the adult hymen, as I have described it, is precisely the same as that of the fœtal hymen, viz., an elliptical slit, with apposed longitudinal lips.[1]

2. *Note on the Anatomy of the "Posterior Commissure of the Vulva."*

With regard to the "posterior commissure of the vulva," I have only one or two remarks to make. In the first place, extensive clinical observation enables me to corroborate the statement of Luschka, that it is the posterior junction of the *labia minora*, and not that of the *labia majora*, that constitutes this commissure. The *labia minora* are in some women

[1] Even careful writers speak of the vaginal orifice as transverse. The vagina itself is transverse—that is, its apposed walls are anterior and posterior, not lateral. But the entrance to the vagina is a vertical slit, and is at right angles to the vagina itself. The orifice of the vulva and that of the vagina are thus alike in their direction, both being bounded by lips that meet along the middle line.

deeply pigmented. It is in such women that the correctness of Luschka's observation can be most easily demonstrated, for the pigmentation is continued across the anterior boundary of the perineum. But, apart from this, if any one will take the trouble, in an adult virgin, to draw the *labia minora* gently upwards, taking one between each thumb and forefinger, he will find that they pull on the fourchette and draw it upwards too, and he will see that the structures are in all respects similar and continuous. No such effect is produced on the fourchette by upward traction on the *labia majora*, and I am not aware of the existence of any evidence in favour of the still too common statement that the posterior commissure of the vulva is constituted by the *labia majora*.

There is one other point which I wish to mention, viz., the situation of the orifice of the duct of the vulvo-vaginal, or Bartholin's gland. It is frequently stated that it is situated in the *fossa navicularis*. This is not the case. The *fossa navicularis* is the part intervening between the fourchette and the posterior part of the hymen; whereas the ducts open, not behind the vaginal orifice, but by the side of it, and nearer its anterior than its posterior extremity. In other words, they open on the inner aspect of the *labia minora*, close to the groove between the *labia minora* and the hymen.